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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,330	12/05/2003	Manoharprasad K. Rao	FGT 1899 PA	1329

28549 7590 09/20/2005

KEVIN G. MIERZWA
ARTZ & ARTZ, P.C.
28333 TELEGRAPH ROAD, SUITE 250
SOUTHFIELD, MI 48034

EXAMINER	
LAI, ANNE VIET NGA	

ART UNIT	PAPER NUMBER
2636	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/707,330	RAO ET AL.	
	Examiner	Art Unit	
	Anne V. Lai	2636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 17, 19 and 20 are rejected under 35 U.S.C. 102(a) as being anticipated by **Breed** [US. 6,343,810].

In claim 17, **Breed** discloses a method of modifying collision load paths of a vehicle comprising: generating object detection signal in response to at least one object external from the vehicle; determining an object parameter comprising object size and object weight in response to object detection signals; and activating a structural stiffness-adjusting device (airbag) within a frame rail of the vehicle in response to the object parameter (abstract; col. 4, lines 52- col. 5, line 55; col. 11, line 57- col. 12, line 10).

In claim 19, **Breed** discloses classifying at least one object, determining velocity, heading (angle), collision type (front/side impact), assessing collision threat, activating at least one structural stiffness-adjusting device (col. 4, line 52- col. 5, line 55; col. 12, lines 4-10).

In claim 20, **Breed** discloses modifying collision load path within at least one side of the vehicle (figs. 9B, 10A, 10C, 11B).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-6, 9-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fraley** [US. 6,786,508] in view of **Yokota** [US. 6,560,520].

In claim 1, **Fraley** discloses an adaptive collision load path modification system for vehicle comprising: a plurality of object detection sensors (impact sensor; col. 1, lines 23-26); at least one structural stiffness-adjusting device (safety devices, energy absorption device, airbag, bolster, bladder) coupled within a frame rail of a vehicle (col. 3, lines 7-12); and a controller (60, 62) for activating the stiffness-adjusting device in response to object detection signals (col. 4, lines 21-33); wherein at least one structural stiffness-adjusting device comprises an outer body at least partially filled with a magneto-rheological material that stiffens the frame rail when activated (col. 1, lines 52-65; col. 4, lines 1-2).

Fraley discloses the activation of the stiffness-adjusting device upon impact is based on vehicle speed, vehicle acceleration and inside vehicle object detected (col. 4, lines 31-51); **Yokota** teaches a stiffness-adjusting device for airbag system comprising detecting object inside (occupant) and outside of the vehicle (determine distance and relative speed to another vehicle or an obstacle; Collision Prediction Sensor System; col. 2, line 66- col. 3, line 24). It would have been obvious to one having ordinary skill in

the art at the time of the invention was made the activation of a safety device responsive to the detected objects external or internal or both inside or outside of the vehicle is based on designer choice to increase the effectiveness of the safety system (prediction and protection).

In claim 2, **Yokota** disclose the object detection signals comprise collision detection information (abstract).

In claims 3 and 4, **Fraley** and **Yokota** disclose impact (contact) sensor, accelerometer, etc. (Fraley, col. 1, lines 24-25; Yokota, col. 11, lines 45-46).

In claim 5, **Yokota** discloses a variety of object sensors including radar, lasers, vision, etc. (col. 3, lines 1-24; col. 7, lines 45-53).

In claim 6, **Fraley** and **Yokota** disclose the stiffness-adjusting device comprises an air bag (the bladder contains magneto-rheological fluid and gas; Fraley, col. 1, line 66- col. 2, line 13).

In claims 9, 10 and 12, **Fraley** and **Yokota** disclose the stiffness-adjusting device is coupled within the frame rail of the vehicle at various locations, front and sides (Fraley, 12, 14, 18, 20, 22, 26, 29 in fig. 1; col. 2, line 48- col. 3, line 22).

5. Claims 13-16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokota** in view of **Wong** [US. 3,871,471] and **Kolassa** [US. 6,290,019].

In claims 13, 14 and 21, **Yokota** discloses an adaptive collision load path modification system for vehicle comprising object detection sensors (10, fig. 2; col. 3, lines 1-25) generating object detection signals; a controller (ECU 11); a structural

stiffness-adjusting device (fig. 2) coupled to the controller and being activated by the controller in response to the object detection signals.

Yokota fails to disclose a tire deflation apparatus; **Wong** teaches deflating tire in collision danger situation, and **Kolassa** teaches tires can be deflated electronically in a vehicle danger situation (abstract; figs. 1-2). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to deflate tires if needed in an imminent danger condition in addition to the stiffness adjusting device to provide additional protection to the vehicle and the people inside or outside the vehicle.

In claim 15, **Kolassa** teaches a pyrotechnic element is used to deflate the tire (col. 2, lines 55-62).

In claim 16, **Kolassa** teaches a plurality of tire deflators associated each with a respective one of the vehicle tires, and a controller activating at least one of the tire deflator based on information from a sensor (fig. 1).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokota**, **Wong** and **Kolassa** in view of **Breed**.

In claim 8, **Yokota**, **Wong** and **Kolassa** combined of claim 13 teach detecting collision object parameters including speed and distance (col. 3, lines 1-25), and subsequently adjusting the stiffness of protecting device and deflating tire; **Breed** teaches the collision object parameters including speed, heading, size, weight, location relative to the vehicle are used to adjust the stiffness of protection devices (col. 4, line 52 through col. 5, line 55; col. 12, lines 4-10). It would have been obvious to anyone of

ordinary skill in the art; more collision object parameters provide more precisions in adjusting the stiffness of protection devices including airbags or tires.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fraley** and **Yokota** in view of **Wong** and **Kolassa**.

In claim 11, the reason for rejection is similar to the rejection of claims 13-14 for the combined Fraley and Yokota collision load path system of claim 1.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Breed** in view of **Wong** and **Kolassa**.

In claim 18, the reason for rejection is similar to the rejection of claims 13-14 for the Breed method of using collision load path system of claim 17.

Response to Arguments

9. Applicant's arguments with respect to claims 1-6, 9-10, 12, 17, and 19-20 have been considered but are moot in view of the new ground(s) of rejection.

10. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In the case of claims 8, 11, 13-16, 18 and 21, Breed, Fraley and Yokota teach modifying load path for a vehicle in

imminent danger of collision (adjusting the stiffness of energy absorbing device or airbag), Wong teaches modifying stiffness of tires in a collision danger situation, and Kolassa teach electronically modifying stiffness of tires when vehicle is in an imminent danger; the systems are dealing with a vehicle in imminent danger situation and the combination is deemed possible to provide more effective protection for vehicle in accident.

11. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne V. Lai whose telephone number is 571-272-2974. The examiner can normally be reached on 8:00 am to 5:30 pm, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hofsass Jeffery can be reached on 571-272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AVL

AVL
9/15/05

JEFFERY HOFSASS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600